

Amendments to the Claims:

1. (Cancelled)

2. (Currently Amended) A magnetic sensor device ~~as claimed in claim 1, in which the device is suited to detect the presence of at least one magnetic particle, the device further comprising:~~

a substrate;

5 a probe element supported by the substrate, the probe element including an array of binding sites configured to receive molecules labeled with magnetic particles;

a magnetic field generator supported by the substrate to generate a magnetic field through the probe element;

10 ~~a sensor circuit comprising the magnetic sensor element for sensing which senses~~ a magnetic property of ~~[[the]]~~ at least one magnetic particle received by the probe element which magnetic property is related to the generated magnetic field;
and

a cross-talk suppression circuit which suppresses at least one of
15 capacitive and magnetic cross-talk between the magnetic field generator and the magnetic sensor element.

3. (Currently Amended) ~~[[A]] The magnetic sensor device according to claim 1-claim 2, wherein the cross-talk suppression means comprises and circuit includes~~ electrostatic shielding device between the magnetic sensor element and the magnetic field generator.

4. (Currently Amended - Withdrawn) ~~[[A]] The magnetic sensor device according to claim 1-claim 2, wherein the at least one magnetic field generator having has a first frequency and a first phase and the magnetic sensor element having has a second frequency and a second phase, wherein the cross-talk~~
5 suppression means comprises circuit includes at least one of:

an electrical frequency distinguishing means for distinguishing circuit which distinguishes between the first frequency and the second frequency; and

an electrical phase distinguishing circuit that distinguishes between the first phase and the second phase.

5. (Currently Amended - Withdrawn) [[A]] The magnetic sensor device according to ~~claim 1~~ claim 2, wherein the at least one magnetic field generator having has a first frequency and a first phase and [[the]] an output signal of the magnetic sensor element having has the first frequency and a second phase equal to the first phase and a phase shift caused by the cross-talk, wherein the cross-talk suppression ~~means comprises electrical phase distinguishing means for distinguishing between the first phase and the second phase~~ circuit compensates for the cross-talk caused phase shift.

6. (Currently Amended) A magnetic sensor device ~~according to claim 1, wherein the~~ comprising:

a substrate;

a first magnetic field generator comprises including a first conductor supported by the substrate and [[an]] a first ac current source for ~~generating which generates~~ an ac current flowing through the conductor;

a magnetic sensor including a sensor element supported by the substrate and a sensor circuit which processes a sensor signal from the sensor element;

a cross-talk suppression circuit which suppresses cross-talk between the magnetic sensor element and the first magnetic field generator, the cross-talk suppression circuit combining a signal from the first ac current source with at least a component of the sensor signal.

7. (Currently Amended) ~~[[A]] The~~ magnetic sensor device according to claim 6, wherein the ~~direction of the ac magnetic field is mainly perpendicular to the plane of the magnetic sensor element in the direct neighborhood of the magnetic sensor element~~ cross-talk suppression circuit includes an electrical element that combines the ac circuit signal and the sensor signal.

8. (Currently Amended) A magnetic sensor device ~~according to claim 1, wherein~~ comprising:

a substrate;

a magnetic sensor element having a second frequency on the substrate;

a first magnetic field generator which generates a first magnetic field on the substrate;

~~a further second magnetic field generator generates a second signal; with a third frequency for compensating the~~

a cross-talk suppression circuit which compensates for a cross-talk signal originating from the at least one first magnetic field generator having the first frequency.

9. (Currently Amended - Withdrawn) ~~[[A]] The~~ magnetic sensor device according to ~~claim 1-claim 8, wherein a further the second~~ magnetic field generator ~~[[12b) has]]~~ generates an anti-phase current or an inverse voltage for compensating the cross-talk signal originating from the ~~at least one first~~ magnetic field generator ~~[[12a)]]~~ having the first frequency.

10. (Currently Amended) ~~[[A]] The~~ magnetic sensor device according to ~~claim 1-claim 8, wherein said at least one the second~~ magnetic field generator and ~~said magnetic sensor element are positioned adjacent each other above a substrate~~ second signal has a third frequency.

11. (Currently Amended - Withdrawn) [[A]] The magnetic sensor device according to ~~claim 7~~claim 2, wherein said ~~at least one~~ magnetic field generator ~~[[12]]~~ is positioned between said substrate ~~[[10]]~~ and said magnetic sensor element ~~[[11]]~~.

12. (Currently Amended) [[A]] The magnetic sensor device according to claim 8, ~~the magnetic sensor element lying in a plane~~, wherein said first magnetic field generator is positioned adjacent one side of the magnetic sensor element and the ~~further~~second magnetic field generator is positioned on ~~[[the]]~~an opposite side of the magnetic sensor element ~~at a same position with respect to a direction perpendicular to the plane of the magnetic sensor element~~.

13. (Currently Amended) [[A]] The magnetic sensor device according to claim 8, wherein the magnetic sensor element ~~lying~~lies in a plane, ~~wherein and~~ said first magnetic field generator is positioned adjacent one side of the magnetic sensor element and ~~a further~~the second magnetic field generator is positioned on the opposite side of the magnetic sensor element at a same position with respect to a direction one of parallel and perpendicular to the plane of the magnetic sensor element.

14. (Currently Amended) [[A]] The magnetic sensor device according to claim 13, ~~furthermore comprising means for determining further~~including:

a circuit which determines a concentration of magnetic particles adjacent the magnetic sensor element and the magnetic field generators.

15. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 14~~claim 13, wherein ~~the means for determining a concentration of magnetic particles comprises a plurality of magnetic field generators~~the cross-talk suppression circuit includes electrical frequency distinguishing circuitry which distinguishes at least between the first frequency and the second frequency.

16. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 15~~ claim 8, wherein the magnetic sensor element lying-lies in a plane, wherein the plurality of and the first and second magnetic field generators are located at different levels with respect to the plane of the magnetic sensor element.

17. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 1~~ claim 2, further including:

a flux guiding layer [[is]] positioned between (1) the magnetic sensor element and the at least one magnetic field generator, and (2) the substrate.

18-19. (Cancelled)

20. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 19~~ claim 2, wherein said magnetic sensor element is a magneto-resistive sensor element.

21. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 20~~ claim 6, wherein the at least one magnetic particle is a magnetic label coupled to a biological molecule.

22. (Currently Amended) ~~Use of the magnetic sensor device as claimed in claim 21 for~~ A method of molecular diagnostics, biological sample analysis, or chemical sample analysis comprising:

passing a sample which includes biological molecules labeled with the magnetic particles over the magnetic sensor device as claimed in claim 2;

receiving some of the biological molecules in some of the binding sites;

measuring the magnetic property of the magnetic particles.

23. (New) The magnetic sensor device as claimed in claim 6, wherein the cross-talk suppression circuit applies the first ac current source signal to the sensor element.

24. (New) The magnetic sensor device as claimed in claim 6, further including:

a second magnetic field generator including a second conductor supported by the substrate and a second ac current source; and

wherein the cross-talk suppression circuit combines a signal from the second ac current source with a component of the sensor signal.

25. (New) The magnetic sensor device as claimed in claim 6, further including:

a second magnetic field generator including a second conductor supported by the substrate, the second conductor being connected with the first ac current source.